DATA DETECTIVES · SKILL 01

The Six Questions

The questions every detective asks first, and how to use them on any mystery.

Who	What	Where
When	Why	How



GRADES 6-10 · 1 CLASS PERIOD · NO PREP · PRINT + GO · KEY INCLUDED

WHAT'S INSIDE

- ☐ **Explainer page**
  What each question finds out, with examples
- ☐ **Student worksheet**
  A short everyday mystery and a 6-row question grid
- ☐ **Desk card**
  Cut-out strip with all six questions
- ☐ **Facilitator key**
  Sample answers and discussion prompts
- ☐ **Teacher page**
  Timing, steps and one tip
- ☐ **Printer friendly**
  Black and white safe, low ink

FOR THE TEACHER

How to run The Six Questions

TIME	GRADES	GROUP	YOU NEED
40–50 min	**6–10**	**Pairs or solo**	**Pencils**

WHAT STUDENTS PRACTICE

Asking good questions before jumping to an answer. Students learn to sort what they know from what they still need, and to name where they would look next.

STEPS

1. Read the explainer page together. Ask for one example of each question from everyday life. 10 MIN
2. Students read the short mystery on the worksheet, alone and silently. 5 MIN
3. Pairs fill the question grid: what we know, what we still need, where we would look. 15 MIN
4. Share out. Which question unlocked the most? Which one did nobody think to ask? 10 MIN
5. Hand out the desk card to keep for the next mystery. 2 MIN

> *Resist giving "the answer." The point is the quality of the questions. A good question beats a quick guess.*

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Every investigation starts with questions

Before a detective guesses, they ask. Each of these six questions digs up a different kind of clue.

Who?

FINDS: THE PEOPLE

Who was there? Who noticed first? Who is affected?

Dig deeper: Who might know something nobody asked them about?

What?

FINDS: THE FACTS

What exactly happened? What changed? What do we have records of?

Dig deeper: What is a fact, and what is just someone's opinion?

Where?

FINDS: THE PLACE

Where did it happen? Where did it not happen?

Dig deeper: Is anything different about that place?

When?

FINDS: THE TIMELINE

When did it start? What happened just before?

Dig deeper: Did something else change at the same time?

Why?

FINDS: POSSIBLE CAUSES

Why might this be happening? List more than one reason.

Dig deeper: What would have to be true for each reason to be right?

How?

FINDS: THE MECHANISM

How did it happen, step by step? How big is it?

Dig deeper: How could we check this?

THE BONUS QUESTION

How do we know?

Ask it after every answer. If you can't point to evidence, it's still a guess. That's fine, just label it as one.

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The Vending Machine Mystery

The vending machine outside the gym at Ridgeview Middle School usually sells about 60 snacks a week. For the last two weeks, it sold about 30.

The principal wants to know what's going on before deciding whether to keep the machine. Here is what people have said so far:

Custodian: "I restock it every Monday." **Office:** "Snack prices went up 25 cents on October 1." **A student:** "The bill slot ate my dollar last week." **PE teacher:** "We got a new water bottle filler by the gym."

Your job: don't solve it yet. Use the six questions to sort what we know from what we still need.

QUESTION	WHAT WE ALREADY KNOW	WHAT WE STILL NEED TO FIND OUT
Who?		
What?		
Where?		
When?		
Why?		
How?		

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Think it through

1. Which of the six questions gave you the most to work with? Why?

2. Write the one question you would ask first if you could ask anyone at Ridgeview. Who would you ask?

I would ask _____ because…

3. List two possible reasons sales dropped. For each, name one piece of evidence that would support it.

4. Pick one thing someone said. Is it a fact, an opinion, or a guess? How do you know?

5. Your hunch right now:

How sure are you? ○ ○ ○ ○ ○ (1 = wild guess, 5 = very sure)

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Keep these handy

Cut along the dashed lines. One card per student.

DATA DETECTIVES

The Six Questions

Who?	the people
What?	the facts
Where?	the place
When?	the timeline
Why?	possible causes
How?	step by step
+	How do we know?

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Sample answers

There is no single right answer. The case is built so several causes fit, and the story never says which one is true. Grade the questions, not the guess.

QUESTION	ALREADY KNOW	STRONG "STILL NEED" ANSWERS
Who?	Custodian, office, one student, PE teacher, principal	Who used to buy most? Did those students stop, or did everyone buy a little less?
What?	Sales fell from about 60 to about 30 a week; prices rose 25 cents	Which snacks dropped? All of them, or only some? Are drinks in the machine too?
Where?	Outside the gym; new bottle filler nearby	Did other machines in the school drop too? Did sales move somewhere else?
When?	Last two weeks; price change Oct 1; restock on Mondays	Did the drop start exactly on Oct 1? Did the schedule, a team season or lunch time change?
Why?	Several possible reasons are on the table	A good answer lists 2 or more reasons and says what evidence would back each one
How?	A bill slot problem was reported once	How often does the slot jam? How could we count sales by day to check?

WHAT TO LISTEN FOR

- **Several causes at once.** Students who say "maybe more than one thing" are thinking well.
- **Evidence they'd collect.** Daily sales records, other machines, asking the students who stopped buying.
- **Fact vs. opinion.** "The bill slot ate my dollar" is one person's report. It's evidence, but not proof that it happens often.
- **Confidence.** A 4 or 5 on question 5 is worth asking about: what would change your mind?

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ABOUT INNOPATH

Learning isn't linear. That's the point.

Innopath makes investigation-based lessons for curious, lateral thinkers. Students work with messy, real-feeling data, make a call, test it, and explain how they know.

WHERE TO GO NEXT

FREE

More free worksheets

One-period mysteries on data, charts and evidence.

BUNDLE

Starter Unit

Five worksheets plus a teacher guide, in order.

FOR SCHOOLS

Full case kits

Two-session investigations with datasets and notebooks. innopathlearning.com

ONE SMALL FAVOR

If this worked in your classroom, a quick review helps other teachers find it. Even one sentence makes a difference.

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